

AMENDMENT UNDER 37 C.F.R. § 1.111
Application No. 10/789,983
Attorney Docket No. Q79556

REMARKS

Claims 1 to 7 are all the claims pending in the application, prior to the present invention.

The Examiner has not acknowledged applicants' claim for foreign priority. Applicants request the Examiner to make such an acknowledgement.

The Examiner has attached to the Office Action a copy of the Substitute Form PTO-1449 filed with the Information Disclosure Statement of March 2, 2004.

The Examiner has not initialed any of the foreign patent documents or non-patent literature documents that are listed on this Form. The Examiner does not provide any reason why she has not initialed these documents and instead has crossed them off. Applicants request the Examiner to initial these documents since they were properly cited in the Information Disclosure Statement.

Claim 6 has been objected to as being an improper dependent claim.

Applicants have canceled claim 6. Accordingly, this objection is moot.

Claims 1, 3, 6 and 7 have been rejected under 35 U.S.C. § 102(b) as anticipated by JP 2-6617 to Murata et al.

In addition, claims 2 and 4 have been rejected under 35 U.S.C. §103(a) as obvious over JP '617 to Murata et al.

Applicants submit that JP '617 does not disclose or render obvious the present invention as set forth in the above amended claims and, accordingly, request withdrawal of this rejection.

The present invention as set forth in claim 1 as amended above is directed to a method for producing a fine carbon fiber that comprises a center portion and a peripheral portion, the center

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portion having a carbon structure different from that of the peripheral portion, comprising thermally decomposing a carbon material in the presence of a catalyst fluid containing a solvent and fine particles of a catalyst dispersed therein, wherein the fine particles have a size of 20 nm or less, and the catalyst comprises a transition metallic compound comprising at least one element selected from the group consisting of Fe, Ni, and Co, wherein a mixture of the transition metallic compound and the carbon material is sprayed in the form of a liquid into a reaction furnace by a carrier gas.

Thus, applicants have amended claim 1 to state that the fine carbon fiber comprises a center portion and a peripheral portion, the center portion having a carbon structure different from that of the peripheral portion. Support for this amendment can be found at page 4, lines 25-28 of the specification.

In addition, applicants have amended claim 1 to include the subject matter of claim 5. Applicants have canceled claim 5.

Claim 5 has not been rejected based on JP '617. Since claim 1 now includes the subject matter of claim 5, applicants submit that claim 1, and the claims dependent thereon, are patentable over JP '617.

Further, applicants disagree with the Examiner's assertion that the disclosure in JP '617 of a catalyst particle size of 500Å or less anticipates the recitation in claim 1 of fine particles having a size of 20 nm or less.

JP '617, at page 4 of the translation that the Examiner supplied, discloses that the catalyst is a microparticle having a particle diameter of 2,000 Å or below, preferably 1,000 Å or below

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and especially 500 Å or below. These Å values correspond to 200 nm or below, 100 nm or below or 50 nm or below, and thus do not disclose fine particles having a size of 20 nm or less as recited in claim 1. See the recently decided case of *Atofina v. The Great Lakes Chemical Corp.*, 78 USPQ2d 1417 (Fed. Cir. 2006), which makes it clear that the disclosure of a broad range does not anticipate a narrower range that is encompassed by the broad range.

Further, JP '617 does not disclose or suggest AOT as a sulfur-containing surfactant and therefore, claim 7, and new claims 8 and 9 dependent thereon, are novel and unobvious. Applicants note that new claims 8 and 9 are based on claims 2 and 4, but depend from claim 7.

In view of the above, applicants submit that JP '617 does not disclose or render obvious the present invention as set forth in the above amended claims and, accordingly, request withdrawal of these rejections.

Claims 1 and 6 have been rejected under 35 U.S.C. § 102(b) as anticipated by JP 59-76921 to Komatsu et al.

In addition, claim 2 has been rejected under 35 U.S.C. § 103(a) as obvious over JP '921 to Komatsu et al in view of U.S. Patent 6,759,693 to Vogeli.

Further, claims 5 and 7 have been rejected under 35 U.S.C. §103(a) as obvious over JP '921 to Komatsu et al.

Applicants submit that JP '921 and Vogeli do not disclose or render obvious the present invention as set forth in the above amended claims and, accordingly, request withdrawal of these rejections.

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With respect to claim 5, whose subject matter has been incorporated into claim 1, the Examiner states that Application Example 1, at page 4 of the translation of JP '921 that the Examiner supplied, discloses spraying the catalyst and solvent into the reactor before adding the carbon and protective gas. The Examiner argues that it would have been obvious to spray all of these components at the same time, because the selection of any order of mixing is obvious.

JP '921 discloses an invention relating to the coating of catalyst fine particles on a substrate, and is completely different from the present invention.

Further, although the Examiner argues that the selection of any order of mixing is obvious, the Examiner does not provide any reason or evidence in support of her argument.

Applicants point out that JP '921 indicates that the manner of adding the catalyst particles is important. Thus, for example, Comparative Example 1 of JP '921 directly sprays catalyst particles onto a base, whereas Application Example 1 of JP '921 sprays a suspension of the catalyst particles, ethanol and dioctyl phthalate, and then removes the ethanol. Further, Application Example 2 and Comparative Example 2 of JP '921 employed methods that were similar to each other, but which were different. Table 1 of JP '921 indicates that the results for Comparative Examples 1 and 2 differed from those of Application Examples 1 and 2 of JP '921, thus showing that the manner of adding the catalyst particles brings about different results.

In addition, claim 1 as amended above recites that the transition metal compound is dispersed in the carbon material serving as a carbon source to form a mixture, and the mixture is sprayed in the form of a liquid into a reaction furnace by a carrier gas. JP '921 does not disclose or suggest these steps. Vogeli also does not disclose or suggest these steps.

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In view of the above, applicants submit that JP '921 does not disclose or render obvious the present invention as set forth in the above amended claims and, accordingly, request withdrawal of these rejections.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

Sheldon I. Landsman
Sheldon I. Landsman
Registration No. 25,430

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE
23373
CUSTOMER NUMBER

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